

WHAT IS CLAIMED IS:

1. A device comprising:
 - a microdisplay integrated circuit (IC);
 - a substantially transparent protective cover coupled to the microdisplay IC; and
 - 5 a base coupled to the microdisplay IC,
wherein thermal expansion characteristics of the base are substantially similar to thermal expansion characteristics of the protective cover.
- 10 2. A device according to Claim 1, the microdisplay IC comprising:
 - a semiconductor substrate; and
 - imaging elements,
wherein the imaging elements are disposed between the cover and the semiconductor substrate, and
 - 15 wherein the semiconductor substrate is disposed between the base and the imaging elements.
- 20 3. A device according to Claim 1, wherein the protective cover is composed of a first material of a first thickness, and the base is composed substantially of the first material of substantially the first thickness.
4. A device according to Claim 1, further comprising:
 - a chip carrier coupled to the base.

5. A device according to Claim 4, the chip carrier defining a recess, the base
mounted within the recess.

6. A device according to Claim 5, a foot of the recess having a first thickness, the
5 first thickness substantially smaller than a thickness of the combined microdisplay IC, the
cover, and the base.

7. A device according to Claim 5, the chip carrier defining an opening,
wherein the protective cover extends partially into, fully into, partially through or
10 fully through the opening.

8. A device according to Claim 5, the chip carrier defining an opening,
wherein the base extends partially into, fully into, partially through or fully through
the opening.

15

9. A device according to Claim 8, further comprising:
a heat sink coupled to the base.

20 10. A device according to Claim 5, further comprising:
a heat sink coupled to the chip carrier.

25 11. A device comprising:
a microdisplay integrated circuit (IC);
a substantially transparent protective cover coupled to the microdisplay IC; and
a chip carrier defining a recess, the microdisplay IC mounted within the recess.

12. A device according to Claim 11, a foot of the recess having a first thickness, the first thickness substantially smaller than a thickness of the combination of the microdisplay IC and the cover.

5

13. A device according to Claim 11, further comprising:

a heat sink coupled to the chip carrier.

14. A device according to Claim 13, wherein the heat sink is coupled to a foot of the
10 recess.

15. A device according to Claim 11, further comprising:

a base coupled to the microdisplay IC,

wherein the base is mounted within the recess.

15

16. A device comprising:

a microdisplay integrated circuit (IC);

a substantially transparent protective cover coupled to the microdisplay IC; and

a chip carrier defining an opening,

20 wherein the cover extends partially into, fully into, partially through or fully through the opening.

17. A device according to Claim 16, further comprising:

a base coupled to the microdisplay IC.

25

18. A device according to Claim 17, further comprising:
 - a heat sink coupled to the base.
19. A device according to Claim 16, wherein the chip carrier is coupled to the microdisplay IC.
 - 5
20. A device according to Claim 19, wherein the microdisplay IC comprises imaging elements and a bonding surface, the bonding surface comprising first conductors to carry electrical signals to the imaging elements,
 - 10

wherein the chip carrier comprises second conductors to carry the electrical signals, and

wherein the first conductors contact respective ones of the second conductors.
21. A method comprising:
 - 15

fabricating at least one set of imaging elements on an upper surface of a semiconductor substrate; and

affixing a base to a lower surface of the semiconductor substrate to generate substantially negligible mechanical stress between the semiconductor substrate and the base in a case that the imaging elements are operated within a range of operating temperatures.

 - 20
22. A method according to Claim 21, wherein affixing the base comprises:
 - 25

applying an epoxy to one or both of the base and the lower surface of the semiconductor substrate;

bringing the base and the lower surface into contact with one another while at a temperature equal to at least one operating temperature of the imaging elements; and

partially curing the epoxy at at least one operating temperature of the imaging elements.

23. A method according to Claim 21, wherein thermal expansion characteristics of
5 the base are substantially to thermal expansion characteristics of the semiconductor substrate.

24. A method comprising:
fabricating at least one set of imaging elements on an upper surface of a
10 semiconductor substrate; and
affixing a base to a lower surface of the semiconductor substrate to substantially flatten the semiconductor substrate.

25. A method according to Claim 24, wherein affixing the base comprises:
15 affixing the base to the lower surface of the semiconductor substrate to substantially flatten the semiconductor substrate in a case that the imaging elements are operated within a range of operating temperatures.

26. A method according to Claim 24, wherein affixing the base comprises:
20 applying an epoxy to one or both of the base and the lower surface of the semiconductor substrate;
bringing the base and the lower surface into contact with one another while at a temperature equal to at least one operating temperature of the imaging elements; and
partially curing the epoxy at at least one operating temperature of the imaging
25 elements.

27. A system comprising:
- an Ultra High Pressure light source to emit light;
- a condenser lens to condense the light;
- a display device to receive the condensed light and to emit image light, the display
- 5 device comprising:
- a microdisplay integrated circuit (IC);
- a substantially transparent protective cover coupled to the microdisplay IC;
- and
- 10 a base coupled to the microdisplay IC, thermal expansion characteristics of the base being substantially similar to thermal expansion characteristics of the protective cover; and
- a projector lens to project the image light.
28. A system according to Claim 27, wherein the display device comprises:
- 15 a chip carrier,
- wherein the chip carrier defines a recess, and
- wherein the base is mounted within the recess.